

Remarks

Claims 1-11 are pending.

Rejection of Claims under 35 U.S.C. § 112

Claims 1-11 are rejected under 35 U.S.C. § 112, first paragraph, as based on a disclosure which is not enabling. More specifically, the Examiner states in his Office Action of November 5, 2003, pp. 2-3, no. 1, that:

The precise manner in/by which the disclosed full-parallax autostereoscopic display & print are rendered/produced, which is critical or essential to the practice of the invention, has not been included in the claims(s) and is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). In particular, the Examiner cannot ascertain how full parallax (*parallax* being defined as: *the apparent displacement of the difference in apparent direction of an object as seen from two points not on a straight line with the object*. Merriam-Webster's College Dictionary, Tenth Ed.) can be achieved through the simulated (or actual) use of two camera frustra on *opposing* sides of an image plane. That is, one would anticipate that it would be necessary to have said two camera frustra (a predetermined separation between existing between same) on one or the other side of said image plane, not diametrically disposed (i.e., disposed on opposing sides) with respect to said image plane. (Emphasis in original)

The applicants respectfully traverse this rejection.

First, the applicants respectfully submit that the Examiner has misapplied the relevant holding of *In re Mayhew*. MPEP §§ 2163, 2163.05, 2164.08(c), 2172.01, and 2174, all generally cite *Mayhew* for the proposition that "A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling." MPEP § 2172.01. More specifically, *Mayhew* holds

Although appellant now strenuously argues that the cooling bath is optional, his specification not only fails to support this contention, but leads us, as it did the examiner and board, to believe that both it and its location are essential. We therefore conclude that claims which fail to recite the use of a cooling zone, specially located, are not supported by an enabling disclosure. Rejections (1) and (2), *supra*, will therefore be sustained. (527 F.2d 1229, at 1233).

The applicants respectfully submit that neither their specification nor any statements of record suggests that the “precise manner in/by which the disclosed full-parallax autostereoscopic display & print are rendered/produced” is essential to the invention.

To the extent that the invention is described by claim 1, the applicants respectfully submit that a method of rendering data is disclosed, and nothing about that claim or the specification suggests the material identified by the Examiner is essential. As for independent claims 10 and 11, the applicants are mindful of the comments in their Response of July 25, 2003 that:

The applicants respectfully submit that the preambles to both claim 10 and claim 11 are essential to point out the invention defined by the claim. Claim 10 is written in the form of a product-by-process claim where the product is defined in terms of the process by which it is made. See, for example, MPEP §2173.05(p). Claim 11 is written in the form of functional descriptive material recorded on some computer readable medium. See, for example, MPEP §2106 (IV)(B)(1), ¶2. In both cases, the preamble is necessary to point out the invention defined by the claim and should therefore be given the effect of a limitation.

These comments clearly qualify the extent to which the preambles of claims 10 and 11 are essential, i.e., to identify claim 10 as a product-by-process claim (with the required process steps shown in the claim) and to identify claim 11 as functional descriptive material recorded on some computer readable medium (again, where the functional descriptive material is shown in the claim). Nothing about the preambles themselves, the applicants’ specification, or the applicants’ comments suggests that the “precise manner in/by which the disclosed full-parallax autostereoscopic display & print are rendered/produced” is essential to the invention.

Moreover, the Federal Circuit has recently distinguished the holding of *In re Mayhew*. *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313. Specifically, the court states “There, however, the method claims omitted a step without which the invention as claimed was wholly inoperative (meaning it simply would not work and could not produce the claimed product).” *Id.* at 1337. The court added regarding the claims at issue in *Amgen*, “[t]hus, the lack of a description of (or a limitation directed to) the [limitation at issue] does not render the invention inoperable and therefore does not run afoul of *In re Mayhew*, 527 F.2d at 1233, 188 USPQ at 358.” *Id.* at 1338. The

applicants respectfully submit that the absence of the limitations alleged to be omitted by the Examiner do not render the invention inoperable.

Second, the applicants respectfully submit that there is sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention without undue or unreasonable experimentation. In order to satisfy the enablement requirement of 35 U.S.C. § 112, the disclosure must have sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention without undue or unreasonable experimentation. Regarding the level of skill of one having ordinary skill in the art, “the examiner must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made.” MPEP § 2142. The courts have provided even clearer guidelines regarding a person of ordinary skill:

The person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art. The actual inventor's skill is not determinative. Factors that may be considered in determining level of skill include: type of problems encountered in art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field. Not all such factors may be present in every case, and one or more of them may predominate. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986).

The applicants respectfully submit that ways in which full parallax can be achieved and use of two camera frustra are well known to those having ordinary skill in the holographic stereogram arts. For example, the applicants’ background section acknowledges this point, and specifically refers to the work of Halle and Kroppe (cited below) which describes in detail one implementation of a prior art double frustrum method.

Finally, while neither agreeing nor disagreeing with the Examiner’s proffered definition of parallax, the applicants note that the applicants’ background section makes clear the meaning of the term “full-parallax”. Moreover, the applicants *speculate* that the Examiner’s conclusion that “one would anticipate that it would be necessary to have said two camera frustra (a predetermined separation between existing between same) on one

or the other side of said image plane,” is based on the erroneous assumption that achieving parallax (based on the Examiner’s definition of the term) would necessitate camera frustra for each of the “two points” mentioned in the Examiner’s definition. For a description of one example of the well known prior art double frustrum techniques, please see Halle cited below.

Accordingly, the applicants respectfully submit that claims 1-11 satisfy the requirements of 35 U.S.C. § 112, first paragraph and are therefore allowable.

Rejection of Claims under 35 U.S.C. § 103

Claims 1-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Halle et al., “Fast Computer Graphics Rendering for Full Parallax Spatial Displays” (Halle) in view of Priem, U.S. Patent No. 5,003,497. The applicants respectfully traverse these rejections.

Halle and Priem taken alone or in combination neither teach nor suggest a computer-implemented method of rendering data for producing a full parallax autostereoscopic display of a digital scene including:

. . . for each image element, determining a distance between said eyepoint and said near clipping plane that would avoid near clipping of said scene, thereby determining a set of near clipping plane distances;

positioning said camera frustra along a z axis in accordance with one or more of said near clipping plane distances;


as required by independent claim 1 and generally required by independent claims 10 and 11. Regarding the “determining a distance . . .” the Examiner refers to the Abstract, Figures 1-10, column 8, lines 28-67, and column 10, lines 1-42 of Priem. Office Action of November 5, 2003, p. 5, ¶1. The applicants respectfully disagree. While Priem does teach a method for determining values of clipping bits, Priem neither teaches nor suggests determining a distance between said eyepoint (as described by the applicants claim) and said near clipping plane (as described by applicants claim) that would avoid near clipping of said scene, thereby determining a set of near clipping plane distances. Moreover, the Examiner points to nothing in either Halle or Priem teaching or suggesting the claimed “positioning said camera frustra along a z axis in accordance with one or more of said near clipping plane distances.”

The Examiner goes on to state that “[i]t would have been obvious . . . to have modified the teachings of Halle et al. such that the clip checking method explicitly disclosed by Priem be implemented, including positioning said camera . . . for at least the purpose of achieving a desired autostereoscopic display or print of a digital scene.” Office Action of November 5, 2003, p. 5, ¶1.

The applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. In addition to the claim elements not taught or suggested by the cited references as described above, the Examiner has not shown that there is some suggestion or motivation to combine Halle and Priem, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Neither reference suggests such a combination, and the Examiner merely makes reference to “achieving a desired autostereoscopic display or print of a digital scene.” The applicants respectfully submit that “a desired autostereoscopic display or print of a digital scene” can be achieved without the combination, and the Examiner has provided no indication about the source of the “desire” that would motivate or suggest such a combination. Moreover, the applicants respectfully submit that the Examiner has failed to explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination, as required by, for example, *In re Rouffet*, 47 USPQ2d 1453 (Fed. Cir. 1998).

Accordingly, the applicants respectfully submit that independent claims 1, 10, and 11 are allowable over Halle and Priem taken alone or in combination. Claims 2-9 depend from independent claim 1 and are allowable for at least this reason.

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

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| I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop: Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on Dec. 6, 2003. | |
|  | <u>12/6/03</u> |
| Attorney for Applicant(s) | Date of Signature |

Respectfully submitted,



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